

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY



To:  
KAWAMIYA, Osamu

AOYAMA & PARTNERS,  
IMP Building,  
3-7, Shiromi 1-chome, Chuo-ku,  
Osaka-shi, Osaka  
5400001 Japan

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) **12.07.2005**

Applicant's or agent's file reference  
**665095**

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No. <b>PCT/JP2005/006581</b>	International filing date (day/month/year) <b>29.03.2005</b>	Priority date (day/month/year) <b>22.04.2004</b>
---	---	---

International Patent Classification (IPC) or both national classification and IPC  
**Int.Cl.<sup>7</sup> H01L23/06, G01P9/04, H01L23/02, 29/84**

Applicant  
**MATSUSHITA ELECTRIC WORKS, LTD.**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

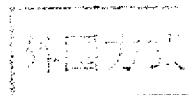
If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion		<b>22.06.2005</b>		
<b>Japan Patent Office</b> 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer	4R	3031
		<b>Kenichiro Hashimoto</b> Telephone No. +81-3-3581-1101 Ext. 3471		



WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006581

Box No. 1      Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006581

Box No. IV Lack of unity of invention

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:

- ☒ paid additional fees  
☐ paid additional fees under protest  
☐ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

- ☐ complied with  
☒ not complied with for the following reasons:

The common technical feature of claims 1-18 is that upper and lower sealing members are made of the same material as a sensor body.

However, this feature is described in JP 2003-188296 A (MITSUBISHI ELECTRONIC), 2003.07.04 and does not have novelty.

The remaining claims 2-18 are not so linked as to form a single general inventive concept for the following reasons:

Claim 2 is concerned with material of members.  
Claim 3 is concerned with hermetic sealing.  
Claims 4-6, 15-17 are concerned with electrical connections.  
Claims 7-14, 18 are concerned with the location of IC.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☒ all parts.  
☐ the parts relating to claims Nos. \_\_\_\_\_

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006581

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	4-18	YES
	Claims	1-3	NO
Inventive step (IS)	Claims		YES
	Claims	1-18	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims		NO

2. Citations and explanations

D1: JP 2003-188296 A(MITSUBISHI ELECTRONIC), 2003.07.04  
D2: JP 5-223842 A(HITACHI LTD.), 1993.09.03  
D3: JP 2001-144117 A(TEXAS INSTRUMENTS), 2001.05.25  
D4: JP 8-32090 A(MITSUBISHI ELECTRONIC), 1996.02.02  
D5: JP 8-78601 A(SANYO ELECTRIC), 1996.03.22

The subject matter of claims 1-3 does not meet the requirement of novelty. D1 discloses an acceleration sensor which is sealed hermetically with lower wafer and upper wafer, and it is obvious that the sensor and the wafers are made of semiconductor.

The subject matter of claims 4,15,16 does not appear to involve an inventive step in view of D1 and D2.

D2 discloses a manner of connecting outer electrodes and a sensor with throughholes which penetrate a sealing member.

The subject matter of claim 5 does not appear to involve an inventive step in view of D1 and D2.

When the person skilled in the art tries to apply the technical feature described in D2 to the invention disclosed in D1, it is natural to dispose an insulating film between a sealing semiconductor wafer and a conducting material.

The subject matter of claims 6,17 does not appear to involve an inventive step in view of D1 and D3.

D3 discloses a conductive pattern along a junction surface of sealing members.

The subject matter of claims 7,8 does not appear to involve an inventive step in view of D1 and D4.

D4 discloses a sealing member made of semiconductor and having an integrated circuit on it.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006581

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
JP 2004-209585 A 'EX'	29.07.2004	27.12.2002	

2. Non-written disclosures (Rules 43bis.1 and 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>
---------------------------------------	--	--

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006581

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V.2

The subject matter of claims 9,10,12-14,18 does not appear to involve an inventive step in view of D1.

Assembling multi-chip module with/without an interposer is well-known technique.

The subject matter of claims 11 does not appear to involve an inventive step in view of D1 and D5.

D5 discloses a bent pin to reduce thermal strain.